

Appl. No. 10/604,568
Amdt. dated August 24, 2006
Reply to Office action of May 30, 2006

Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

- 1 (currently amended): An RF transceiver module for wireless communication devices
- 5 comprising:
- a multi-layered substrate;
- an RF transceiver IC mounted on the multi-layered substrate for receiving and transmitting voice or data signals;
- at least one band selection filter mounted on the multi-layered substrate for filtering
- 10 received RF signals;
- an antenna switch integrated in the multi-layered substrate which is capable of being switched to transmit RF signals ~~generated by the power amplifiers~~ to the external antenna or to receive RF signals from an external antenna to the RF transceiver IC through the band selection filter;
- 15 a plurality of passive devices embedded in the multi-layered substrate;
- wiring embedded in the multi-layered substrate for electrically connecting the passive devices, the RF transceiver, and the band selection filter;
- a shielding via fence formed under the band selection filter for isolating high power RF signals produced by a power amplifier from the RF transceiver IC;
- 20 a shielding ground plane formed one or two substrate layers beneath the transceiver IC for providing isolation between the embedded passive devices and the RF transceiver IC; and
- a plurality of input, output, and grounding pads formed on the bottom of multi-layered substrate.
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- 2 (original): The RF transceiver module of claim 1 that is mounted on a printed circuit board (PCB) and the RF transceiver module is electrically connected to the PCB

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through the input and output pads.

3 (original): The RF transceiver module of claim 2 being electrically connected to a
digital signal processor which is mounted on the PCB for converting received analog
5 signals into digital signals, and converting digital signals into analog signals.

4 (original): The RF transceiver module of claim 1 wherein the antenna switch is
electrically connected to at least one power amplifier which amplifies RF signals
transmitted by the RF transceiver IC.
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5 (original): The RF transceiver module of claim 4 wherein the antenna switch is
electrically connected to a plurality of power amplifiers, and the antenna switch is
capable of being switched to select a power amplifier to transmit RF signals from.

15 6 (original): The RF transceiver module of claim 1 wherein the band selection filter is a
surface acoustic wave (SAW) filter.

7 (original): The RF transceiver module of claim 6 wherein the SAW filter is in bare die
form.
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8 (original): The RF transceiver module of claim 6 wherein the SAW filter is in packaged
form.

9 (original): The RF transceiver module of claim 1 wherein the RF transceiver IC is in
bare die form.
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10 (original): The RF transceiver module of claim 1 wherein the RF transceiver IC is in
packaged form.

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11 (original): The RF transceiver module of claim 1 wherein the multi-layered substrate is a low temperature co-fired ceramic (LTCC) substrate.

5 12 (original): The RF transceiver module of claim 1 having a plurality of band selection filters mounted on the multi-layered substrate for filtering received RF signals of corresponding frequency bands wherein the antenna switch is capable of being switched to direct received RF signals to a selected band selection filter.

10 13 (original): The RF transceiver module of claim 12 being compliant with a GPRS mobile phone standard.

14 (original): The RF transceiver module of claim 12 being compliant with a GSM mobile phone standard.

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